

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Wireless E911 Location Accuracy Requirements)	PS Docket No. 07-114
)	
Revision of the Commission's Rules to)	WT Docket No. 94-102
Ensure Compatibility with Enhanced 911)	
Emergency Calling Systems)	
)	
Association of the Public-Safety Communications)	
Officials-International, Inc. Request for)	
Declaratory Ruling)	
)	
911 Requirement for IP-Enabled Service)	WC Docket No. 05-196
Providers)	

REPLY COMMENTS OF UNITED STATES CELLULAR CORPORATION

United States Cellular Corporation ("USCC") hereby submits these reply comments pursuant to the Commission's September 23, 2008 Public Notice seeking comments on the wireless E911 location accuracy proposals submitted jointly by Verizon Wireless, APCO and NENA for handset-based carriers (the "Verizon Wireless proposal") and by AT&T, APCO and NENA for network-based carriers (the "AT&T proposal").¹ USCC applauds the decision of APCO and NENA to accept E911 location accuracy measurements on the county level. However, as noted by several commenters, this breakthrough does not justify the adoption of the Verizon Wireless or AT&T proposals at this time because there is no evidence assessing whether these proposals are appropriate for other carriers using the same air interface. Or, to put it more succinctly, there is no evidence here that one size fits all.

¹ *Public Notice*, Comment Sought on Proposals Regarding Service Rules for Wireless Enhanced 911 Phase II Location Accuracy and Reliability, DA 08-2129, PS Docket No. 07-114, September 22, 2008.

Instead, like several other commenters, USCC urges the Commission to convene an E911 Technical Advisory Group (“ETAG”) and task it with a number of responsibilities, including evaluating the impact of both the Verizon Wireless and AT&T proposals on other carriers. USCC recognizes the Commission’s urgent commitment to improving public safety. With that in mind, USCC supports the proposals of AT&T and others to establish firm reporting deadlines and regular meeting requirements for the ETAG to ensure the completion of its work in a timely fashion.

I. INTRODUCTION & SUMMARY

USCC is a Tier II, handset-based E911 provider. It has invested substantial financial and personnel resources to upgrade its network, improve the accuracy of the location data it collects and increase the penetration of GPS-capable handsets among its customers. USCC continually audits and validates location data between its Base Station Almanacs and its switches and has contracted with Intrado to ensure that its Mobile Positioning Center and Position Determining Equipment are continually updated with the latest software available.

When the Commission started its E911 location accuracy proceeding over 14 months ago, USCC was the **only** wireless carrier that filed comments urging the Commission to change its rules to require location accuracy measurements at the MSA or RSA level.² USCC noted that it had always tested for E911 location accuracy at the switch level rather than the statewide levels relied upon by many carriers.³ It should thus come as no surprise that USCC supports county-based E911 location accuracy measurements because, as NENA and APCO

² Comments of USCC at 5-7 (July 5, 2007) .

³ *Id.* at 2-3

acknowledged, county-based requirements represent “a substantial improvement over the measurement areas currently used by [many] carriers.”⁴

As noted above, although the Verizon Wireless and AT&T proposals represent an enormous step forward from the PSAP-level accuracy requirements originally adopted in this proceeding, the Commission should resist the urge to adopt these proposals without fully vetting their impact on all affected carriers. USCC joins a number of parties at the initial comment stage that urged the Commission to determine if the proposals negotiated by the country’s largest network-based and largest handset-based carriers were appropriate for other carriers before adopting them. For its part, USCC questions a provision in the Verizon Wireless proposal that allows handset-based carriers to exclude up to 15 percent of their counties from the location accuracy requirements “based on heavy forestation.”⁵ To date, neither APCO, NENA nor Verizon Wireless have explained the rationale for setting the exclusion limit at 15 percent nor have they explained why this exclusion only applies in counties with heavy forestation.

Before adopting the Verizon Wireless and AT&T proposals and imposing them on other carriers, the Commission should refer several important issues to the ETAG. First and foremost, the ETAG should determine whether other carriers are technologically and topologically capable of meeting the location accuracy formulations in these proposals. If the Commission declines to make this referral, USCC urges the Commission to (i) solicit comment on the 15 percent exclusion level in the Verizon Wireless proposal along with any explanation and supporting evidence provided by Verizon Wireless, APCO or NENA and/or (ii) increase the exclusion level

⁴ Letter from Robert Gurss, APCO International and Brian Fontes, NENA, to Marlene Dortch, FCC Secretary dated September 9, 2008 (“APCO NENA September 9 Letter”) at para. 2.

⁵ Letter from John Scott, Verizon Wireless, to Marlene Dortch, FCC Secretary, dated September 5, 2008 (“September 5 Verizon Wireless Letter”) at 2.

or reformulate the standard to account for Tier II and Tier III carriers that serve counties with significant terrain obstructions but do not have large enough service areas to comply with the 15 percent limit; and (iii) modify or clarify the limit to permit the exclusion of counties beyond “heavy forestation” to include counties with any type of significant terrain obstruction (natural or man-made), that adversely affects handset location accuracy determinations; and (iv) modify the rule to permit handset-based carriers to exclude counties with some terrain obstruction and fewer than three cell sites.

II. ONE SIZE DOES NOT FIT ALL.

USCC agrees with many of the initial commenters that APCO and NENA’s willingness to accept wireless E911 accuracy at the county level is a major step forward in this proceeding. USCC also agrees that this development does not justify approving the AT&T or Verizon Wireless proposals at this time because there has been no consideration of how these proposals impact other carriers.

This was a common theme in the initial comments. Nokia observed that while the AT&T and Verizon Wireless proposals represent an important first step in establishing more achievable E911 standards, “they do not necessarily represent the views or the needs of the entire industry.”⁶ Motorola similarly urged the Commission “to adopt rules which represent the needs of the wireless industry as a whole.”⁷

USCC also agrees with T-Mobile and the Rural Cellular Association’s (“RCA”) arguments opposing the approval of the AT&T proposal at this time, arguments that apply

⁶ Comments of Nokia and Nokia Siemens Networks US LLC (“Nokia Comments”) at 1.

⁷ Comments of Motorola, Inc. (“Motorola Comments”) at 1.

equally to the Verizon Wireless proposal.⁸ Verizon Wireless did not consult with USCC when negotiating its agreement with APCO and NENA. Similarly, Verizon Wireless could not reasonably be expected to assess and accommodate the needs of other handset-based carriers during its negotiations with APCO and NENA. For these reasons, the Commission cannot adopt the Verizon Wireless proposal at this stage. As T-Mobile and RCA observed:

the Commission cannot simply assume – or “predict” – without any evidence that other carriers with different start points and different cell site densities, local topographies, network designs, customer mixes and resources can meet AT&T’s [or Verizon Wireless’] benchmarks.⁹

Before applying the Verizon Wireless proposal to other carriers, the Commission should convene an ETAG immediately and charge it with assessing whether other carriers “with different customer bases, population densities, service areas, cell site densities, local topographies, network designs and handset penetration percentages” can comply with the Verizon Wireless proposal.¹⁰ Until the Commission has some assurance that other carriers are technologically, topologically and practically capable of complying, it should adopt the Verizon Wireless proposal and apply it to other handset-based carriers.

III. THE COMMISSION SHOULD MODIFY/CLARIFY THE VERIZON PROPOSAL

If the Commission decides not to refer the Verizon Wireless proposal to an ETAG, the Commission should carefully evaluate the so-called 15 percent exclusion in the Verizon Wireless proposal before adopting it. As currently drafted, this provision allows a handset-based carrier to

⁸ Comments of T-Mobile USA, Inc. and the Rural Cellular Association on the 911 Location Accuracy Remand (“T-Mobile/RCA Comments”) at 3.

⁹ T-Mobile/RCA Comments at 3.

¹⁰ See Section IV *infra* at 8-10 for a discussion of the ETAG referral.

exclude up to 15 percent of the counties it serves from the location accuracy requirements “based upon heavy forestation that limits handset-based technology accuracy in those counties.”¹¹

First, and most importantly, the Commission should insist on an explanation for setting the exclusion level at 15 percent as well as evidence supporting that determination. To date, Verizon, APCO and NENA have been completely silent on their rationale for setting the exclusion limit at 15 percent. Unfortunately, this arbitrary-looking number is extremely important to USCC and, most likely, many other Tier II and Tier III carriers. USCC currently operates in 531 counties across the country; approximately 30 percent of those counties are considered heavily-forested or otherwise have impediments to GPS satellite visibility (“GPS-impaired counties”). While USCC recognizes that setting numerical limits is not an exact science, the Commission needs much more than has been provided by APCO, NENA or Verizon Wireless to date to justify setting the exclusion level at 15 percent.

Second, the Commission should issue another Public Notice seeking comment on the 15 percent exclusion and any supporting explanation/evidence that APCO, NENA or Verizon Wireless provided. Alternatively, the Commission should modify the exclusion level to accommodate Tier II and Tier III carriers that serve GPS-impaired counties but do not have large enough overall service areas to comply with the 15 percent limit. The 15 percent exclusion limit apparently makes sense for the largest handset-based carrier in the country because the sheer number of counties in its overall service area keeps the percentage of GPS-impaired counties at or below the 15 percent limit. This same analysis does not translate to smaller carriers that serve fewer counties.

¹¹ Letter from Brian Fontes (NENA), Robert Gurss (APCO) and John Scott (Verizon Wireless) to Kevin Martin, FCC Chairman, dated August 20, 2008 (APCO/NENA/Verizon letter) at 2.

Third, regardless of its decision on the exclusion level, the Commission should expand and/or clarify the circumstances that will allow a carrier to exclude a county from its location accuracy requirements beyond “heavy forestation.”¹² Specifically, the Commission should make clear that a carrier can exclude any county where significant terrain obstructions, either natural or man-made, limit the accuracy of handset-based location technology.

There are numerous reasons to take this action: (i) the current version makes no logical sense. There is no principled reason to ignore man-made or other natural obstacles that impede/interfere with handset-based location accuracy technology; (ii) the “heavy forestation” limit conflicts with Verizon Wireless’ other submissions in this proceeding. Specifically, Verizon indicated that that “the greatest technical barrier to the accuracy of handset-based E911 technologies is the presence of terrain obstructions, whether natural or man made;”¹³ and (iii), for its part, Sprint believes that Verizon Wireless simply got the description wrong: “it is Sprint’s understanding that APCO and NENA agree that the proposal applies to all terrain obstructions, whether natural (cloud cover, mountains) or manmade (buildings), because both types of obstructions adversely affect location accuracy.”¹⁴

Fourth, if no action is taken to modify the 15 percent exclusion percentage, the Commission should also permit handset-based carriers to exclude any county with partial GPS impairment and less than three cell sites. USCC, like Verizon Wireless, uses Assisted GPS technology for its E911 solution. In circumstances when a handset’s visibility to GPS satellites is blocked or otherwise impaired, USCC’s A-GPS system automatically relies on data from surrounding cell sites to supplement or replace the GPS determined location of the handset.

¹² APCO/NENA/Verizon letter at 2.

¹³ September 5 Verizon Wireless Letter at 1 (¶ 3).

¹⁴ Comments of Sprint Nextel Corporation (“Sprint Nextel Comments”) at 3 n.5.

When this happens in a county with less than three cell sites, the location accuracy of this de facto, network-based system will clearly be impaired because terrestrial triangulation is impossible. For this reason, the Commission should permit handset-based carriers to exclude these counties from their location accuracy requirements.

IV. THE COMMISSION SHOULD CONVENE AN E911 TECHNICAL ADVISORY GROUP (“ETAG”) BEFORE ADOPTING THESE PROPOSALS.

Like Nokia, USCC urges the Commission to convene an ETAG “to best represent the needs of the industry as whole” in resolving the various open E911 issues, including indoor testing, improvement of accuracy testing in terrain challenged areas and the provision of confidence and uncertainty data to PSAPs.¹⁵ USCC also agrees with Motorola’s view that the ETAG is the best way to resolve concerns about the lack of industry participation in the location accuracy negotiations “and to continue to refine the proposals offered by AT&T and Verizon Wireless.”¹⁶

To ensure that these important public safety issues are addressed as efficiently and quickly as possible, USCC supports AT&T’s proposal to include deadlines and meeting requirements when the ETAG is convened and given assigned tasks.¹⁷ Specifically, USCC urges the Commission to: (i) convene the ETAG, (ii) require it meet shortly after the location accuracy rules are adopted and periodically thereafter and (iii) assign reporting deadlines for the various topics/issues the ETAG has been assigned. USCC anticipates a rolling series of deadlines for the ETAG based on the urgency of the assigned issues. For example, as noted above, USCC urges the Commission to refer the county exclusion percentage in the Verizon Wireless proposal to an

¹⁵ Nokia Comments at 2.

¹⁶ Motorola Comments at 4.

¹⁷ Comments of AT&T Inc. (“AT&T Comments”) at 5.

ETAG. Given the importance of this issue in establishing meaningful, achievable location accuracy requirements for handset-based carriers, USCC expects that the ETAG's deadline to address this issue would be as short as reasonably possible.

A referral of the county exclusion percentage to an ETAG is in the public interest because it provides best chance to find a solution acceptable to all the important E911 stakeholders. As noted above, Tier II and Tier III carriers do not have the nationwide footprint enjoyed by Verizon Wireless. For this reason, the number of GPS-impaired counties in the service areas of many Tier II or Tier III carriers will exceed the 15 percent limit in the Verizon Wireless proposal.

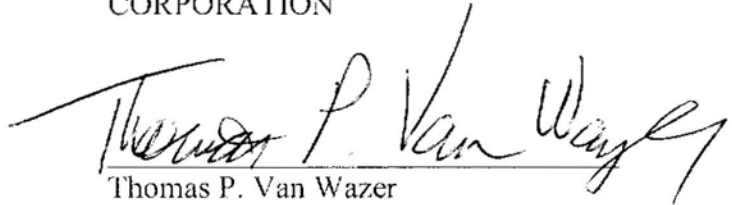
The ETAG's evaluation of the 15 percent exclusion limit will undoubtedly include other acceptable exclusion percentages levels. Recognizing that the public safety community may be sensitive to significant increases in the exclusion percentages, an alternative formulation for compliance may be needed. The ETAG will have the best chance to identify an alternative formulation because it will include representatives from across the industry and public safety community working collaboratively. One potential solution is to focus on the percentage of a wireless carriers' service population that resides in counties that meet the location accuracy requirements. Operating from the premise that GPS-impaired counties are typically less-populated, this alternative would permit a carrier to exclude its GPS-impaired counties provided that some percentage of the carrier's service population were located in counties that complied with the location accuracy requirements. While USCC does not necessarily endorse this approach, it is an example of an alternative that may be needed to ensure that the Commission does not adopt a location accuracy rule that many wireless carriers will never meet.

V. CONCLUSION

As the only wireless carrier to support location accuracy requirements at the MSA/RSA level over one year ago, USCC applauds the decision by APCO and NENA to accept E911 location accuracy measurements at the county level. However, this decision does not justify simply adopting the AT&T and Verizon Wireless proposals without determining if they are appropriate for other handset-based or network-based carriers. To assist in this process, the Commission should convene an ETAG quickly, assign issues to it (including the county exclusion percentage in the Verizon Wireless proposal) and establish meeting requirements and hard deadlines for expected reports. An ETAG will enhance the likelihood that the Commission establishes technologically-feasible, attainable E911 location accuracy requirements for all wireless carriers rather than the two largest carriers in the country.

Respectfully submitted,

UNITED STATES CELLULAR
CORPORATION

A handwritten signature in black ink, reading "Thomas P. Van Wazer". The signature is fluid and cursive, with a long horizontal stroke at the end.

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